Patent Claims

1. A method for quadrature-bias compensation in a Coriolis gyro, whose resonator (1) is in the form of a coupled system comprising a first and a second linear oscillator (3, 4), having the following steps:

- determination of the quadrature bias of the Coriolis gyro,
- production of an electrostatic field in order to vary the mutual alignment of the two oscillators (3, 4) with respect to one another, with the alignment/strength of the electrostatic field being regulated such that the determined quadrature bias is as small as possible.

2. The method as claimed in claim 1, **characterized** in that the electrostatic field results in a change in the alignment of first spring elements (5_1 to 5_4), which connect the first oscillator (3) to a gyro frame (7_3, 7_4) of the Coriolis gyro, and/or a change in the alignment of second spring elements (6_1, 6_2), which couple the first oscillator (3) to the second oscillator (4).

3. The method as claimed in claim 2, **characterized** in that the alignment of the first spring elements (5_1 to 5_4) is varied by varying the position/alignment of the first oscillator (3) by means of the electrostatic field, and in that the alignment of the second spring elements (6_1, 6_2) is varied by varying the position/alignment of the second oscillator (4) by means of the electrostatic field.

4. The method as claimed in claim 2 or 3, **characterized** in that the electrical field results in the alignments of the first and second spring elements (6_1, 6_2, 5_1 to 5_4) being made orthogonal with respect to one another.

5. The method as claimed in one of claims 2 to 4, **characterized** in that the second oscillator (4) is attached to/clamped in on the first oscillator (3) at one end by means of the second spring elements (6_1, 6_2), and/or the first oscillator (3) is attached to/clamped in on a gyro frame of the Coriolis gyro at one end by means of the first spring elements (5_1 to 5_4).

6. A Coriolis gyro, whose resonator (1) is in the form of a coupled system comprising a first and a second linear oscillator (3, 4),
characterized by

- a device for production of an electrostatic field (11_1', 11_2', 10_1 to 10_4) by means of which the alignment of the two oscillators (3, 4) with respect to one another can be varied,
- a device (45, 47) for determination of any quadrature bias of the Coriolis gyro, and
- a control loop (55, 56, 57), by means of which the strength of the electrostatic field is regulated as a function of the determined quadrature bias such that the determined quadrature bias is as small as possible.

7. The Coriolis gyro as claimed in claim 6, **characterized** in that the first oscillator (3) is connected by means of first spring elements (5_1 to 5_4) to a gyro frame (7_1, 7_2) of the Coriolis gyro, and the second oscillator (4) is connected by means of second spring elements (6_1, 6_2) to the first oscillator (3).

8. The Coriolis gyro as claimed in claim 7, **characterized** in that the first and second spring elements are arranged/designed such that the alignment angle of the first spring elements (5_1 to 5_4) with respect to the gyro frame (7_3, 7_4) can be varied by means of the electrostatic field, and/or in that the alignment angle of the second spring elements (6_1, 6_2) with respect to the first oscillator (3) can be varied by means of the electrostatic field.

9. The Coriolis gyro as claimed in claim 7 or 8, **characterized** in that the second oscillator (4) is attached to/clamped in on the first oscillator (3) at one end by means of the second spring elements (6_1, 6_2), and/or the first oscillator (3) is attached to/clamped in on a gyro frame of the Coriolis gyro at one end by means of the first spring elements (5_1 to 5_4).

10. The Coriolis gyro as claimed in one of claims 7 to 9, **characterized** in that all of the second spring elements (6_1 to 6_2) which connect the second oscillator (4) to the first oscillator (3) are designed such that force is introduced from the first oscillator (3) to the second oscillator (4) essentially from one side of the first oscillator (3).

11. The Coriolis gyro as claimed in one of claims 7 to 10, **characterized** in that all of the first spring elements (5_1 to 5_4) which connect the first oscillator (3) to the gyro frame (7_3, 7_4) of the Coriolis gyro are arranged parallel and on the same plane as one another, with the start and end points of the first spring elements (5_1 to 5_4) each being located on a common axis.

12. A Coriolis gyro (1'), having a first and a second resonator (70_1, 70_2), which are each in the form of a coupled system comprising a first and a second linear oscillator (3_1, 3_2, 4_1, 4_2), with the first resonator (70_1) being mechanically/electrostatically connected/coupled to the second resonator (70_2) such that the two resonators can be caused to oscillate in antiphase with respect to one another along a common oscillation axis (72).

13. The Coriolis gyro (1') as claimed in claim 12, **characterized by:**

- a device for production of electrostatic fields (11_1, 11_2, 10_1 to 10_4, and 11_3, 11_4, 10_5 to 10_8), by means

of which the alignment of the linear oscillators (3_1, 3_2, 4_1, 4_2) with respect to one another can be varied,

- a device for determination of the quadrature bias of the Coriolis gyro (1'), and
- control loops (64), by means of which the strengths of the electrostatic fields are regulated such that the determined quadrature bias is as small as possible.

14. The Coriolis gyro (1') as claimed in claim 12 or 13, **characterized** in that the configurations of the first and of the second resonator (70_1, 70_2) are identical, with the resonators (70_1, 70_2) being arranged axially symmetrically with respect to one another, with respect to an axis of symmetry (73) which is at right angles to the common oscillation axis (72).

15. The Coriolis gyro (1') as claimed in one of claims 12 to 14, **characterized** in that the first oscillators (3_1, 3_2) are each connected by means of first spring elements (5_1 - 5_8) to a gyro frame (7_1 - 7_{14}) of the Coriolis gyro, and the second oscillators (4_1, 4_2) are each connected by means of second spring elements (6_1 - 6_4) to one of the first oscillators (3_1, 3_2).